APPENDIX 1: Recommended Rule Language

PART 43—MAINTENANCE, PREVENTIVE MAINTENANCE, REBUILDING, AND ALTERATIONS

1. The authority citation for part 43 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44703, 44705, 44707, 44711, 44713, 44717.

2. Revise 43.9 to read as follows:

§ 43.9 Maintenance, preventive maintenance, rebuilding, and alteration records (except inspections performed in accordance with part 91, part 121, part 125, §§ 135.411(a)(1) and 135.419 of this chapter).

(a) Maintenance record entries. Except as provided in paragraphs (f) and (g) of this section, each person who maintains, performs preventive maintenance, rebuilds, or alters an aircraft, airframe, aircraft engine, propeller, appliance, component, or part must make an entry in the maintenance record of that item and provide that record to the owner or operator. The entry must be in English or retrievable in the English language. The entry may be made in a logbook, on a Major Repair and Alteration Form (FAA Form 337), on an Airworthiness Approval Tag (FAA Form 8130-3), or in any other manner acceptable to the Administrator. The entry must contain the following information:

(1) The name of the person performing the work, if other than the person specified in paragraph (a)(5) of this section;

(2) A description of the work performed including a reference to any acceptable or approved data used to perform the work and a description of compliance with an airworthiness directive and the method of compliance;

(3) The date of completion of the work performed;

(4) The total time in service of the aircraft when the work was performed, if applicable; and

(5) If the work has been performed satisfactorily, the name, signature, certificate number, and type of certificate held by the person approving the work. The signature constitutes the approval for return to service only for the work performed.

(b) Major alterations. The maintenance record entry for documenting a major alteration must include a specific description of the work performed including a reference to approved technical data. Except as provided in paragraph (e) of this section, each person performing a major alteration must–

(1) Execute FAA Form 337 in duplicate at least;

(2) Give the original FAA Form 337 to the aircraft owner; and

(3) Forward a copy of FAA Form 337 to the local Flight Standards District Office (FSDO) within 48 hours after the aircraft, airframe, aircraft engine, propeller, appliance, component or part is approved for return to service;

(c) Major repairs. The maintenance record entry for documenting a major repair must include a specific description of the work performed including a reference to approved data or data developed under Special Federal Aviation Regulations (SFAR) No. 36. Except as provided in paragraphs (d) and (e) of this section, each person performing a major repair must execute FAA Form 337 and provide it to the owner or operator.

(d) Repair stations. Except for instrument repair and calibration, radio calibration, and major repairs made in accordance with a manual or specifications acceptable to the Administrator, a certificated repair station may, in place of paragraph (c)—

(1) Use the customer's work order upon which the repair is recorded; and

(2) Give the owner or operator a copy of the work order signed by an authorized representative of the repair station and retain a duplicate copy for at least 2 years

from the date of approval for return to service. The work order must—

(i) Identify the aircraft, airframe, aircraft engine(s), propeller, or appliance;

(ii) If an aircraft, include the make, model, serial number, nationality and registration marks, as applicable, and the location of the repaired area;

(iii) If an airframe, aircraft engine(s), propeller, or appliance, include the manufacturer's name of the part, model, part number, and serial number (if any); and

(iv) Include the following or similarly worded statement: "The aircraft, airframe, aircraft engine, propeller, appliance, component, or part (as applicable) identified above was repaired and inspected in accordance with current regulations of the FAA and is approved for return to service with respect to the work performed. Pertinent details of the repair are on file at this repair station under Order No. _____

Date signed _____

_____

(Signature of authorized repair station representative)

_____

(Repair station name) (Certificate number)

(Address of repair station)."

(e) Extended-Range Fuel Tanks. For extended-range fuel tanks installed within the passenger compartment or a baggage compartment, a person who performs a major repair or major alteration, and the person authorized to approve the work done in these areas, by § 43.7 of this part, must execute an FAA Form 337 in at least triplicate. FAA Form 337 must be distributed as follows:

(1) Give the original form to the aircraft owner;

(2) Place one copy on board the aircraft; and

(3) Forward a copy of the form to the local FSDO within 48 hours after the aircraft, airframe, aircraft engine, propeller, or appliance is approved for return to service.

(f) Holders of operating certificates. Each holder of an air carrier operating certificate or an operating certificate issued under part 121 or part 135 that is required by its approved operations specifications to provide a continuous airworthiness maintenance program must make a record of the maintenance, preventive maintenance, and alteration on the aircraft, airframes, aircraft engine, propeller, appliances, components or parts it operates in accordance with the applicable provisions of part 121 or part 135 of this chapter, as appropriate.

(g) Inspections. This section does not apply to persons performing inspections in accordance with parts 91, 121, or 125; or §§ 135.411 (a)(1) or 135.419 of this chapter.

3. Revise § 43.15 to read as follows:

§ 43.15 Additional performance rules for inspections.

(a) Inspection programs.

(1) Each person performing an inspection required by parts 91, 121, 125, or 135 of this chapter must perform the inspection so as to determine whether the aircraft, or portion(s) thereof under inspection, meet all applicable airworthiness requirements; and

(2) Each person performing an inspection required by parts 91, 121, 125, 135, or § 91.409(e) of this chapter must perform the inspection in accordance with the instructions and procedures set forth in the inspection program for the aircraft being inspected.

(b) Annual and 100-hour inspections. Each person performing an annual or 100-hour inspection must use a checklist while performing the inspection. The checklist may be of the person's own design, one provided by the manufacturer of the equipment being inspected, or one obtained from another source. This checklist must include

the scope of the items contained in appendix D to this part.

(c) Progressive Inspection.

(1) Each person performing a progressive inspection must, at the start of a progressive inspection system, inspect the aircraft completely. After the initial inspection, routine and detailed inspections must be conducted as prescribed in the progressive inspection schedule. Routine inspections must consist of visual examinations or checks of the appliances, the aircraft, and its components and systems, with disassembly as necessary. For the purposes of this paragraph, the overhaul of a component or system is considered to be a detailed inspection.

(2) If the aircraft is away for the station where inspections normally are conducted, an appropriately rated mechanic, a certificated repair station, or the manufacturer of the aircraft may perform inspections in accordance with the procedures and using the forms of the person who would otherwise perform the inspection.

4. Add paragraph (e)(3) to § 43.17 to read as follows:

§ 43.17 Maintenance, preventive maintenance, and alterations performed on U.S. aeronautical products by certain Canadian persons.

* * * * *

(e) * * *

(3) A person who performs a major repair or major alteration and the person authorized to approve that work under the provisions of this section must execute a Major Repair and Alteration Form (FAA Form 337), at least in duplicate. A completed copy of that form must be—

(i) Given to the aircraft owner; and

(ii) Forwarded to the Federal Aviation Administration, Aircraft Registration Branch, Post Office Box 25082, Oklahoma City, Oklahoma 73125, within 48 hours after the work is inspected.

* * * * *

5. Amend appendix A to part 43 to revise paragraphs (b) and (c) to read as follows:

Appendix A to part 43, Major alterations, major repairs, and preventive maintenance

* * * * *

(b) * * *

(1) Airframe major repairs. Repairs to the following parts of an airframe and repairs of the following types, involving the strengthening, reinforcing, splicing, and manufacturing of primary structural members or their replacement, when replacement is by fabrication such as riveting, welding, or bonding, are airframe major repairs.

(xxi) The repairs involving substitution of materials and/or hardware design.

(xxii) The repair of a damaged area in stressed coverings made of metal or plywood where the damaged area exceeds 6 inches.

(xxiii) The repair of a damaged area in a composite or chemically milled structure.

(xxiv) * * *

(xxix) The repair of a removable or integral fuel tank or oil tank.

(xxx) Any repair to a damaged bulkhead in a pressurized hull.

(2) * * *

(i) Assembly of a crankcase or crankshaft of a reciprocating engine equipped with an integral supercharger.

(ii) Assembly of a crankcase or crankshaft of a reciprocating engine equipped with other than spur-type propeller reduction gearing.

(iii) The repair of a structural engine part by any method other than those contained in the manufacturer's instructions for continued airworthiness.

(3) Propeller and Governor major repairs. Repairs of the following types, excluding the treatment of corrosion and application of protective coatings, are major repairs:

(i) Repair of a steel hub or blade.

(ii) Straightening or shortening of blades.

(iii) Retipping and/or replacement of tip fabric of wood blades and fixed-pitch wood propellers.

(iv) Replacement of plastic covering and/or repairs to wood composition blades.

(v) Replacement of outer laminations or inlay work on wood blades and fixed-pitch wood propellers.

(vi) Repair of elongated bolt holes in the hub of fixed-pitch wood propellers.

(vii) Repair of a composite blade beyond the manufacturer's recommendations for field repair.

(viii) Repair of propeller governors, excluding external RPM adjustments.

(ix) Overhaul of controllable pitch propellers.

(x) Repairs such as deep dents, cuts, scratches, scars, and nicks in aluminum blades.

(vii) Any nonstructural cover plates.

(10) Applying preservative or protective material to components or parts.

(11) Making small fabric repairs to a balloon envelope not requiring load tape repair or replacement.

(12) Making small simple repairs to fairings, cowlings, and small patches and reinforcements not changing the contour so as to interfere with proper air flow.

(13) Replacing the side windows on nonpressurized aircraft, where the work does not interfere with the structure or any operating system, for example, controls and electrical equipment.

(14) Replacing seats, restraint belts, or seat parts.

(15) Replacing bulbs, reflectors, or lenses of position and landing light components.

(16) Replacing wheels with skis or skis with wheels, where no weight and balance computation is involved.

(17) Replacing any cowling not requiring removal of the propeller or disconnection of flight controls.

(18) Replacing or cleaning spark plugs and setting the spark plugs gap clearance.

(19) Replacing any hose connection, except hydraulic connections.

(20) Replacing prefabricated fuel lines.

(21) Cleaning or replacing fuel and oil strainers or filter elements or changing engine oil.

(22) Replacing nickel cadmium (NICAD) or lead-acid batteries and servicing lead-acid batteries.

(23) Cleaning the balloon-burner pilot and main nozzles.

(24) Replacement or adjustment of nonstructural standard fasteners.

(25) The interchange of balloon baskets and burners on envelopes when specifically designed for quick removal and installation.

(26) Removing, checking, and replacing magnetic chip detectors.

(27) The inspection and maintenance tasks prescribed and identified specifically as preventive maintenance in a primary category aircraft type certificate or supplemental type certificate holder's approved special inspection and preventive maintenance program when accomplished on a primary category aircraft provided the inspection and maintenance tasks are:

(i) Performed by the holder of at least a private pilot certificate issued under 14 CFR part 61 of this chapter who is the registered owner (including co-owners)

of the affected aircraft and who holds a certificate of competency for the affected aircraft issued by–

(1) A school approved under 14 CFR § 147.21(e) of this chapter;

(2) The holder of the production certificate for that primary category aircraft that has a special training program approved under 14 CFR § 21.24 of this subchapter; or

(3) Another entity that has a course approved by the Administrator; and

(ii) Performed in accordance with instructions contained in the special inspection and preventive maintenance program approved as part of the aircraft's type design or supplemental type design.

(28) Removing and replacing self-contained, front instrument panel-mounted navigation and communication devices that use tray-mounted connectors to connect the unit to the instrument panel (excluding automatic flight control systems, transponders, and microwave frequency distance measuring equipment (DME)). The approved unit must be designed to be readily and repeatedly removed and replaced, and pertinent instructions must be provided. Before the unit's intended use, an operational check must

be performed in accordance with the applicable sections of part 91 of this chapter.

(29) Updating self-contained, front instrument panel-mounted air traffic control navigational software data bases (excluding those for automatic flight control systems, transponders, and microwave frequency DME) provided no disassembly of the unit is required and pertinent instructions are provided. Before the unit's intended use, an operational check must be performed in accordance with applicable sections of part 91 of this chapter.

6. Appendix B to part 43 is removed and reserved.

Appendix B to part 43—[Removed and reserved.]

7. Revise appendix D to part 43 to read as follows:

Appendix D—Scope of items (as applicable to the particular aircraft) to be included in annual and 100-hour inspection

Any person approving an aircraft for return to service following an annual or 100-hour inspection must, before that inspection, have all necessary inspection plates, access doors, fairings, cowlings, and propeller spinners removed or open for inspection. That person must ensure the aircraft has been cleaned thoroughly.

I. Aircraft other than a balloon.

A. Aircraft structures. Each person approving an aircraft for return to service following an annual or 100-hour inspection must, as applicable, inspect the following structures for corrosion, debonding, exposure, delamination, erosion, distortion, evidence of failure, insecure attachment of fittings, missing parts or components, loose or missing fasteners, evidence of improper torque, improper safetying, leakage, stains, cracks, chafing, excessive wear, improper travel, binding, and general condition:

1. Cabin and cockpit (including seats and restraint systems);

2. Doors, windows, and windscreens, including emergency exits;

3. Engine nacelle and mounts;

4. Fairings and cowlings;

5. Landing gear;

6. Propeller;

7. Empennage;

8. Wing; and

9. Fabric and skin.

B. Aircraft systems. Each person approving an aircraft for return to service following an annual or 100-hour inspection must inspect the following systems, as applicable:

1. Brake.

a. Discs, drums and linings for excessive wear and cracks;

b. Hydraulic lines for wear, cracks, leaks, and security of attachment; and

c. Master/wheel cylinders for leakage.

2. Electrical.

a. Battery for corrosion, improper installation, and improper charge;

b. Interior and exterior lighting for operation;

c. Fuses, circuit breakers, switches for improper operation; and

d. Wiring and conduits for improper routing, insecure mounting, and obvious defects.

3. Environmental.

a. Heating ducts and heating system for leakage, cracks, distortion, stains, security, and general condition;

b. Cooling system for leakage, cracks, distortion, stains, security, and general condition;

c. Ventilation system for obstruction and general condition; and

d. Controls for secure mounting, operation, restricted travel, binding, and wear.

4. Exhaust.

a. Stacks and muffler for cracks, defects, leakage, distortion, and security; and

b. Turbocharger/controller for cracks, defects, leakage, distortion, and security.

5. Flight control.

a. Autopilot for security and general condition; and

b. Control surfaces for improper rigging, damage, corrosion, and operation.

6. Fuel.

a. Filters, sumps, and drains for leakage and contamination;

b. Lines, tanks, and selectors for chafing, leakage, security, deterioration, corrosion, and operation; and

c. Pumps for leakage, security of attachment, and improper operation.

7. Hydraulic.

a. Filters for leakage and contamination;

b. Lines and tanks for chafing, leakage, security, deterioration, corrosion, and operation; and

c. Pumps for leakage, security of attachment, and improper operation.

8. Ice protection.

a. Airframe boots for improper attachment, deterioration, and debonding;

b. Windshield deicing/anti-icing for improper operation and attachment;

c. Pitot-static heat for improper operation;

d. Propeller/rotor blade ice control systems for improper operation;

(1) Propeller boots, harnesses, and alcohol feed tubes for deterioration, and debonding; and

(2) Propeller slip rings, brush blocks, and harnesses for excessive wear.

9. Ignition.

a. Ignition system for proper timing and operation;

b. Harness for chafing, deterioration, and general condition; and

c. Spark plugs for wear and general condition.

10. Induction.

a. Carburetor/fuel injection unit for leakage and security;

b. Intake manifold for cracks, leakage, and security;

c. Air box for cracks, chafing, and loose or missing fasteners; and

d. Air filter for blockage, cleanliness, proper seal, and general condition.

11. Avionics.

a. Radio and electronic equipment for security and proper mounting;

b. Wiring and conduits for improper routing, insecure mounting, and obvious defects;

c. Bonding and shielding for improper installation and poor condition;

d. Antennas for poor condition and insecure mounting;

e. Static wicks for bonding and security; and

f. Emergency locating transmitter for security and battery life.

12. Landing gear.

a. Retraction system for rigging, chafing, and abnormal wear;

b. Emergency extension system for rigging and proper operation;

c. Shock absorbing devices for leakage, abnormal wear, and deterioration;

d. Wheels and tires for cracks, distortion, improper pressure, deterioration, and abnormal wear;

e. Floats, skids, cross tubes, and skis for cracks, deterioration, and corrosion;

f. Landing gear doors for cracks, distortion, corrosion, and rigging; and

g. Wheel bearings for abnormal wear, water spots, and general condition.

13. Powerplant.

a. Engine combustion chamber for proper compression;

b. Oil filters, screens, and sump drains for leakage and contamination;

c. Engine mount for cracks, corrosion, improper attachment, and chafing;

d. Flexible vibration dampers for deterioration and general condition;

e. Lines, hoses, and clamps for leakage, routing, chafing, and security;

f. Baffles for cracks, condition of rubber seal, and security; and

g. Engine controls for security, rigging, wear, binding, and proper operation.

14. Propeller.

a. Propeller hub, spinner, and bulkhead assembly for interference, insecurity, deterioration, and other defects;

b. Hub assembly for interference, insufficient protective coating, and other defects;

c. Hub lubricant for insufficient quantity and contamination from moisture;

d. Blades for evidence of lightning strike, object strike, excessive movement, insufficient protective coating, and other defects; and

e. Control mechanism for improper operation, insecure mounting, binding, wear, and restricted travel of the linkage hardware.

15. Other systems.

a. Instruments for security and markings, and placarding, as appropriate;

b. Vacuum system for blockage, cleanliness of filters, condition of hoses, and general condition; and

c. Pitot/static system for blockage and general condition.

16. Miscellaneous.

a. Inspect each installed miscellaneous item that is not otherwise covered by this listing for improper installation and improper operation.

C. Rotorcraft. In addition to the applicable requirements of section B of this appendix, rotorcraft must have the following items inspected:

1. Drivetrain.

a. Mast for condition;

b. Transmission for condition;

c. Transmission oil screen/filter for contamination;

d. Transmission magnetic chip plug for operation;

e. Transmission mount for condition;

f. Engine to transmission driveshaft for condition;

g. Freewheel unit/overrunning clutch for condition and operation;

h. Freewheel unit/overrunning clutch magnetic chip plug for operation;

i. Tail rotor driveshaft/mount for condition;

j. Tail rotor drive intermediate gearbox magnetic chip plug for operation;

k. Tail rotor drive intermediate gearbox for condition;

l. Tail rotor gearbox for condition; and

m. Tail rotor gearbox magnetic chip plug for operation.

2. Main rotor.

a. Swashplate for condition and smooth rotation;

b. Pitch links for condition;

c. Hub for condition; and

d. Blades for condition and corrosion.

3. Tail rotor for condition.

a. Pitch change mechanism for condition;

b. Hub for condition; and

c. Blades for condition and corrosion.

D. Operational checks. Each person approving an aircraft, other than a balloon, for return to service following an annual or 100-hour inspection must perform the following checks to determine satisfactory performance in accordance with the manufacturers recommendations:

1. Engine/rotor run up to ensure proper operation;

2. Propeller functional check to ensure proper operation;

3. Control surfaces for freedom and direction of movement;

4. Ice control system for proper operation;

5. Aircraft systems for proper operation;

6. Emergency locator transmitter for proper operation;

7. Communication and navigation systems for proper operation; and

8. All instrumentation for proper operation.

II. Balloons.

A. Balloon structures. Each person approving a balloon for return to service following an annual or 100-hour inspection must inspect the following items as indicated:

1. Envelope and top.

a. Envelope and top for evidence of over temperature;

b. Fabric for unrepaired damage, burns, tears, holes, and abrasions;

c. Repairs for compliance per manufacturer's specifications;

d. Fabric for strength and porosity;

e. Seams, stitching, webbing, and ropes for general condition;

f. Temperature sensor and lead for general condition;

g. Gore lines for integrity, fraying, and general condition; and

h. Attachments (anchor loops, velcro, etc.) for improper installation and general condition.

2. Suspension.

a. Cables and cords for fraying, kinks, discoloration, and broken strands;

b. Envelope and basket for improper attachment; and

c. Cables, ropes and tubes in basket for general condition.

3. Burner.

a. Burner for cracks and structural integrity;

b. Frame for corrosion and general condition;

c. Preheat coils and fittings for cracks and general condition;

d. Blaster, auxiliary, and pilot valves for improper operation; and

e. Pressure gauge for integrity.

4. Fuel system.

a. Hoses for leaks, proper routing, abrasions, and pressure test;

b. Valves and regulators for damage, security, operation and pressure test;

c. Tanks and straps for integrity and liquid level gauge for improper operation; and

d. Fittings for security.

5. Baskets.

a. Gondola assembly, including welds for structural integrity;

b. Wicker for damage, holes, and general condition;

c. Fuel tank mooring for security and damage; and

d. Bolts, nuts, and pins for security and corrosion.

6. Instruments.

a. Instruments for improper operation, security, attachment, and markings.

B. Operational checks. Each person approving a balloon for return to service following an annual or 100-hour inspection must perform operational checks of the following items:

a. Ignition system;

b. Fuel system;

c. Pilot light;

d. Burner; and

e. Auxiliary and redundant system

8. Remove and reserve appendixes E and F to part 43.

Appendix E to part 43—[Removed and reserved.]

Appendix F to part 43—[Removed and reserved.]

PART 91 - GENERAL OPERATING AND FLIGHT RULES

9. The authority citation for part 91 continues to read as follows:

Authority: 49 U.S.C. 106(g), 1155, 40103, 40113, 40120, 44101, 44111, 44701, 44709, 44711,44712, 44715, 44716, 44717, 44722, 46306, 46315, 46316, 46504, 46506-46507, 47122, 47508, 47528-47531.

10. Revise § 91.411 to read as follows:

§ 91.411 Altimeter system and altitude reporting equipment tests and inspections.

(a) No person may operate an aircraft, in controlled airspace under instrument flight rules, unless–

(1) Each static pressure system, each altimeter instrument, and each automatic pressure altitude reporting system has been tested and inspected within the preceding 24 calendar months according to methods, techniques, and practices of an inspection program acceptable to the Administrator and found to comply with the requirements of that inspection program.

(2) Except for the opening and closing of system drain and alternate static pressure valves, following any opening and closing of the static pressure system, that system has been tested and inspected according to methods, techniques, and practices of an inspection program acceptable to the Administrator and found to comply with the requirements of that inspection program.

(3) Following installation or maintenance on the automatic pressure altitude reporting system of the ATC transponder where data correspondence error could be

introduced, the integrated system has been tested and inspected and according to methods, techniques, and practices of an inspection program acceptable to the Administrator and found to comply with the requirements of that inspection program.

(b) Any altimeter and altitude reporting equipment approved under a technical standard order is considered to be tested and inspected as of the date of its manufacture.

(c) No person may operate an aircraft in controlled airspace, under instrument flight rules, at an altitude above the maximum altitude at which all altimeters and the automatic altitude reporting system of that aircraft was tested.

11. Revise § 91.413 to read as follows:

§ 91.413 ATC transponder tests and inspections.

(a) No person may use an air traffic control transponder that is specified in § 91.215(a), § 121.345(c), or § 135.143(c) of this chapter unless within the preceding 24 calendar months, that ATC transponder has been tested and inspected according to methods, techniques, and practices of an inspection program acceptable to the Administrator and found to comply with the requirements of that inspection program.

(b) Following any installation or maintenance on an ATC transponder where data correspondence error could be introduced, the integrated system has been tested and inspected according to methods, techniques, and practices of an inspection program acceptable to the Administrator and found to comply with the requirements of that inspection program.

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